of the *North China Herald*. A native public writer not long since claimed that a skilful physician in this department of medicine could cure such diseases as imbecility, fits, cholera, &c. The principle of cauterisation is simply that of counter-irritation; and the English writer bears personal testimony to its efficacy in the case of a slight sunstroke, although the operator was a simple Manchu peasant, and instrument a couple of copper coins. Very extraordinary cures are attributed to acupuncture by the Chinese. It is first performed in the hollow of the elbow of each arm. If the puncture draws blood there is no danger, but if no blood appears the case is regarded as very grave. But before abandoning the sufferer, puncture of the abdomen is tried. Seizing a handful of flesh, the operator drives the needle right through it, and then draws it backwards and forwards a few times. If the patient manifests any sense of pain, or if any blood is drawn, a poultice of eggs and buckwheat flour is applied over the puncture, and recovery is regarded as almost certain; but if no pain is felt and no blood flows, the case is declared hopeless, and the sufferer is left to die. The case is then quoted of a young Chinese, educated abroad, who was attacked with cholera; his extremities became cold, and cramp set in in a somewhat alarming manner. The barber-surgeon who was called in commenced by running a needle into the pit of the patient's stomach, a jet of very dark blood following; he then punctured the calf, the two breasts, and the forehead of the sufferer, freeing a certain quantity of blood at each prick. The relief is said to have been instantaneous, and in two days recovery was complete. The Chinese explanation of this treatment is that, when the blood is in the poisoned condition which induces the choleraic symptoms, it becomes thick, and accumulates in certain portions of the body. A clever surgeon knows exactly how to put his finger on the particular spots, and, by skilfully "opening the mouth of the heart," as the operation is called, sets free the poisoned fluid which causes all the mischief. It is noteworthy that faith in the efficacy of this mode of treatment is not confined to the masses, but is shared by Chinese who have been abroad and have had ample experience of Western medical practice.

MR. JAMES HOPPS, Indian Engineering College, Cooper's Hill, writes us with regard to his paper on the electric resistance of metals, read before the Physical Society (NATURE, vol. xxx. p. 283), that an *increase* of resistance on *uncoiling*, and a *decrease* on *coiling* takes place with lead, copper, German silver, aluminium, and magnesium, and also during the first few operations on soft iron. An *increase* almost invariably follows coiling and uncoiling with zinc, but the effects of coiling vary from $\frac{1}{2}$ to $\frac{1}{10}$ of the effects of uncoiling. The full paper will appear in the Society's *Proceedings*.

THE additions to the Zoological Society's Gardens during the past week include a Malbrouck Monkey (*Cercopithecus cynosurus* ♂) from West Africa, presented by Mr. J. H. Harling; a Cape Sea Lion (*Otaria pusilla*) from South Africa, presented by Mr. John Hunt; two Daubenton's Curassows (*Crax daubentoni* ♂ ♀) from Venezuela, a Common Guinea-Fowl (*Numida meleagris*), British, presented by Mr. W. Burch; two Indian Kites (*Milvus govinda*) from Eastern Asia, presented by Mr. W. Jamrach; a Barn Owl (*Strix flammea*), European, presented by Mr. G. H. Garrett; three Angulated Tortoises (*Chersina angulata*), two Geometric Tortoises (*Testudo geometrica*) from South Africa, presented by the Rev. G. H. R. Fisk, C.M.Z.S.; two Smooth Snakes (*Coronella lævis*), European, presented respectively by Mr. W. H. B. Pain and Mr. F. H. Jennings; two Black-tailed Deer (*Cariacus columbianus* ♂ ♀) from North America, two White-backed Piping Crows (*Gymnorhina leuconota*) from Australia, two Common Cormorants (*Phalacrocorax carbo*), British, deposited; two Red-capped Parrots (*Pionopsitta pileata*) from Brazil, a White-bellied Sea-Eagle (*Haliætus leucogaster*) from Australia, a Mohr Gazelle (*Gazella mohr* ♀) from North Africa, a Violet-necked Lory (*Eos rinciniata*) from Moluccas, a Black Tortoise (*Testudo carbonaria*), a Common Boa (*Boa constrictor*) from South America, two Electric Eels (*Gymnotus electricus*) from British Guiana, purchased; three Elliot's Pheasants (*Phasianus elliotı*), bred in England; a Mule Deer (*Cariacus macrotis*), a Mesopotamian Fallow Deer (*Dama mesopotamica* ♂), born in the Gardens.

OUR ASTRONOMICAL COLUMN

SCHMIDT'S VARIABLE-STAR IN VIRGO.—On June 6, 1866, Schmidt remarked, east and south of Spica, a star which he at first estimated 4 m., subsequently 5·4, not found in Argelander's *Uranometria*; it was much better visible than *i* Virginis, the reddish-yellow fifth magnitude south of Spica. By observations during the next fortnight its light appeared to have slowly diminished, nevertheless on June 19 it was still visible with the naked eye, though there was strong moonlight. On examination of the catalogues, &c., it was found that Lalande estimated it 6·7 on May 10, 1795; Piazzi calls it 6·7 and 7 in the *Storia Celeste*, not 8 as in the printed catalogue: Bremicker entered it of the seventh magnitude on his Berlin chart, while Lamont calls it 8 m. in Zone 355, observed on May 22, 1846. Heis has it 6·7, while Gould says, "Var. 5½–6½." Houzeau judged it a sixth magnitude at the date 1875·11. We have thus evidence that it has been pretty conspicuously visible to the naked eye, while, on the authority of Bremicker and Lamont, it has been at other times beyond average unassisted vision.

Schjellerup has raised a point of much interest in connection with this star. There has been a difficulty in identifying satisfactorily Ptolemy's 19th star in Virgo, which he calls a fifth magnitude (ϵ in his notation). Baily, in his notes to his edition of Ptolemy's Catalogue, published in vol. xiii. of the *Memoirs* of the Royal Astronomical Society, writes: "The star 68 Virginis agrees with the position given by Ptolemy; but it is difficult to make it accord with the description, as being in the 'latus sequens' of the quadrilateral figure." Schjellerup, in his translation of Sûfi, remarks: "A l'endroit où, selon la description détaillée que nous a fournie Sûfi, doit se trouver la 19ᵉ étoile, il n'y à aucune étoile aujourd'hui visible à l'œil nu, selon *Uranometria Nova* d'Argelander, pendant qu'il s'accorde très-bien avec celui de Lalande 25086, étoile qui est entre la sixième et la septième grandeur. En faisant la revision de cette note, je me rappelai l'étoile variable au sud-est de α Virginis, dont nous a donné avis M. Schmidt dans le nr. 1597, *Astronomische Nachrichten*. Quelle ne fut ma surprise en m'apercevant de l'identité entre cette variable et la 19ᵉ de Sûfi?"

This identification, however, is hardly so certain as may at first sight appear. Schmidt's star is in the Greenwich Catalogue for 1872, which gives its position for 1880·0—

Right Ascension 202° 4′·4 ... ... Declination −12° 35′·9

Ptolemy professes to have reduced his catalogue to the first year of Antoninus, A.D. 138, though it is well known that his longitudes are in defect to the amount of about 1° for that epoch. Unfortunately, for the 19th star of Virgo, though the longitudes agree, the latitudes given in the various editions of the Almagest and by Sûfi are materially different. Baily has it −3° 0′, with a note that in the Venice edition in Latin by Liechtenstein, in 1515, it is +0° 20′, which he thought might arise, as regards the difference in amount, from mistaking γ for γ′. While in the two manuscript copies of Sûfi (who adopted the positions of the Almagest, adding 12° 42′ to the longitudes) the latitude is −1° 20′.

To reduce the Greenwich position for 1880 to the year A.D. 138, we have in the usual notation—

$$A = 168° 47′·3 \quad A′ = 191° 0′·8 \quad \theta = 9° 40′·6;$$

with which the position for Ptolemy's epoch is found to be—

Right Ascension ... 179° 36′·0 Declination ... −3° 5′·4;

and assuming the obliquity of the ecliptic to be 23° 41′·8, we have—

Longitude ... 180° 53′ Latitude ... −2° 59′

The longitude of the 19th of Virgo is apparently 178° in all the editions of the Almagest, and the latitude differs 1° 39′ from that assigned in the manuscripts used by Schjellerup.

If we similarly reduce the Greenwich position of 68 Virgini to Ptolemy's epoch, we find—

Longitude ... 178° 53′ Latitude ... − 3° 14′

and Baily's identification of the 19th of Virgo would thus appear the more satisfactory, at least if the reading he has adopted for the latitude is admitted; still there is the difficulty pointed out in his note which is given above; 68 Virginis is estimated a sixth magnitude both by Argelander and Heis.

In 1879 Mr. S. W. Burnham discovered that this star is a very close double, the mean of his measures giving—

1879·39 Position 81°·2. Distance 0″·47. Magnitude 6·1 and 6·6.

He remarks that hitherto close double-stars have not been found among the variables. It remains to be ascertained whether, if the variability of Schmidt's star be established, both or only one of the components vary.

A New Comet.—A telegram notifies the discovery of a comet by Mr. E. Barnard, on the 16th inst., though, probably from interruption from unfavourable weather in verifying it, the announcement appears not to have been made for several days subsequently. The position given is as follows:—

h. m. s. ° ′ ″ ° ′ ″
July 16 at 15 21 2 G.M.T. ... R.A. 237 40 0 ... N.P.D. 127 9 52

It would be well within reach of the observatories of Southern Europe. From a telegram received at Dun Echt, Dr. Copeland conjectures that the comet has been seen at Melbourne, Madras, and Cape Town; Prof. Krüger has no allusion to this in his note in the *Astronomische Nachrichten*. The comet's motion is stated to be slow.

SCOTTISH METEOROLOGICAL SOCIETY

THE half-yearly general meeting of the Society was held on Monday, July 21, in Edinburgh, Mr. Milne Home in the chair.

Mr. Buchan read the report from the Council. As regards the Society's stations, one has been added since last general meeting at Glencarron, in Ross-shire. It has been established by Lord M'Laren, and from its position it is one of the most important additions recently made to the Society's stations. The effort made to increase the membership has been already attended with marked success. The membership now numbers 601. The first number of the new series of the Society's *Journal* is now mostly in type, and will shortly be in the members' hands. It has been arranged that in future the proceedings will appear annually in March. The Council referred with much satisfaction to the successful manner in which Mr. Omond and his assistants carry on the observations on Ben Nevis. The discussion of the past observations shows that paramount importance must be assigned to a continuous record, not only of the barometer, but also of the temperature, humidity, wind, cloud, and precipitation, on account of their intimate relations to the barometric fluctuations and to coming changes of weather. Every effort will therefore be made to secure to science a continuous hourly record of the weather phenomena of Ben Nevis. Arrangements have been made for the completion of the Observatory buildings during the course of this summer. A beginning of the work is made to-day (July 21), and it is expected that the whole will be finished some time before October. The new buildings include a tower, on the top of which will be placed anemometers, specially designed by Prof. Chrystal and Prof. Crum Brown, for registering the direction, velocity, and pressure of the wind, a correct knowledge of which is of supreme importance in carrying on the scientific and practical inquiries aimed at in the establishment of the Observatory. To the expenses connected with the erection of the anemometers a grant of 50*l*. has been made by the Committee of the Government Research Fund. An exit from the building has been made in the upper part of the tower, which will enable the observers to make outside observations during the winter months, on many occasions when they could not otherwise be attempted. The Council regret to intimate that their application to the Treasury for a grant in aid of the establishment of the Marine Station at Granton was not successful. Notwithstanding the refusal of the Government to give assistance, the Marine Station, to which the Society contributes 300*l*. a year from the Fishery Fund, was established in April. There is every probability that the subscriptions from the general public will shortly permit of very desirable extensions being made to the further equipment of the station. In response to an offer by the Scottish Sea-Fishing and Curing Company, Mr. Pearcey, of the *Challenger* Office, made observations on a cruise in the ship *Energy* in the North Sea, between Shetland and Norway. The specimens obtained during the cruise, and the observations made, are now under consideration.

A paper was read by Mr. Buchan on the meteorology of Ben Nevis, which we hope to give in an early number.

Dr. Arthur Mitchell described a new instrument for collecting continuously any cosmic dust, volcanic dust, or other impurities mechanically suspended in the atmosphere, the essential part of the instrument being a series of filters of fine platinum wires, through which the air is continuously drawn by an aspirator.

A report of the work done at the Scottish Marine Station at Granton was submitted by Mr. J. T. Cunningham, naturalist in charge. He detailed the nature of the work since the opening of the Station in April. The method of working in the yacht *Medusa* was then described. The position of the yacht is ascertained by means of bearings at the time when the dredge or other apparatus is put down or taken up. At these points the depth of the water and the nature of the bottom are ascertained, and various physical observations taken, including the temperature of the air, and that of the sea at the bottom, at the surface, and at intermediate depths; samples of sea water are also secured from different depths. When the dredge or trawl is hauled on deck, the contents are examined and the relative abundance of the animals and Algæ noted down. Some of the specimens are preserved on the spot, and a number of them are brought alive to the Station, and placed in the floating cages or in aquaria in the laboratory, so that they may be more minutely examined in the living state, and form a stock which may be drawn upon for purposes of special research. The products of the fine tow-nets are treated in the same way; a microscope is always on board, and in calm weather the minute specimens can be examined in the cabin. Samples of the contents of the tow-nets are preserved and labelled on board, and the remainder are brought back to the Station alive and examined in the laboratory. The results of one day's work at sea usually provide material for two or three days' work on shore. The work of dealing with the preserved collections, identifying and separating the animals, goes on continuously at the Station. The materials for faunological and systematic zoological work soon became abundant, and in the inquiries continuously carried on special attention is given to identify the numerous kinds of fish spawn, both floating and attached, which occur in the Firth of Forth and neighbouring parts of the sea. In order that the systematic and general work of the Station might not be neglected, the services of Mr. John Henderson as zoologist have been secured. The study of the Algæ has been energetically carried on by Mr. Rattray. The work carried on by Mr. Mill has been chiefly physical. A regular system of meterological observations, both on land and in the "ark," has been set on foot. Up to the present time three biologists have availed themselves of the opportunities afforded by the Station for research—Prof. W. A. Herdman, University College, Liverpool; Prof. Haycraft, Mason's College, Birmingham; and Mr. J. R. Davis, University College, Aberystwith.

Mr. Hugh Robert Mill read a paper on the tidal variation of temperature at the Marine Station. He detailed the nature of the experiments, these including hourly and half-hourly observations by night and by day on three occasions, extending in all to ninety-seven hours. The results show interesting relations between the temperature, the time of day, and the state of the tide. Without attempting to generalise, the following facts observed in each series of observations may be stated:—The surface temperature rose when the air temperature rose, and fell when it fell, with no very apparent reference to the tides. The curve for bottom temperature also followed that of air temperature, though to a slight extent; but the crest of the heat wave was retarded for several hours, and the tide produced great modifications in the temperature. When the tide flowed early in the morning it cooled the bottom temperature; when it entered at a later hour it raised it. By day the bottom temperature was lower than that of the surface; by night it was equal to it or slightly higher. The causes which produced these various effects must be very complex. The contour of the bottom of the quarry, the rates of influx of the tide, the direction of the currents it originates, the duration and period of the sunshine, the direction of the wind, the heating of the sand by the sun and its cooling by radiation, the heating and cooling of the surface water by radiation, and